



*statistical instruments for industry*

MARCH 1967

# ELGENCO NOISE GENERATOR SHORT FORM CATALOG

ELGENCO INCORPORATED  
1550 EUCLID STREET  
SANTA MONICA, CALIFORNIA 90404

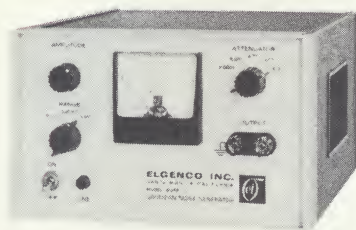
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# ELGENCO NOISE GENERATORS

## SOLID STATE NOISE GENERATORS



### Model 602A 5 Hz to 5 mHz, 3 Ranges.....\$330

**FREQ. RANGES:** 20 Hz to 20 kHz, 20 Hz to 500 kHz, 20 Hz to 5 mHz  
**OUTPUT SPECTRUM:** 20 Hz to 20 kHz —  $\pm 1$  db, 20 Hz to 500 kHz —  $\pm 3$  db, 500 kHz to 5 mHz —  $\pm 8$  db.

**OUTPUT LEVEL:** (open circuit), 20 kHz range — 3 volts, 500 kHz range — 2 volts, 5 mHz range — 1 volt.

**OUTPUT IMPEDANCE:** 900 ohms  $\pm 10\%$ .

**MAXIMUM LOAD:** (on direct output) no limit.

**OUTPUT STEP ATTENUATOR:** X1.0, X0.1, X0.1, X.001, and X.0001; calibrated to work into open circuit.

Accuracy:  $\pm 3\%$  to 100 kHz,  $\pm 10\%$  to 5 mHz.

Output Impedance: 200 ohms  $\pm 1\%$ .

**SPECTRAL DENSITY:** Approximate spectral density (mv/ $\sqrt{\text{Hz}}$ ) for 1 volt rms output. 20 kHz band — 5, 500 kHz band — 1.2, 5 mHz band — 0.4.

**AMPLITUDE PROBABILITY DISTRIBUTION:** Symmetrical non-clipped Gaussian waveform all ranges.

**OUTPUT METER:** 0-5 volts rms.

### Model 603A 5 Hz to 5 mHz, 3 Ranges.....\$545

**FREQ. RANGES:** 10 Hz to 20 kHz, 10 Hz to 500 kHz, 10 Hz to 5 mHz  
**OUTPUT SPECTRUM:** 10 Hz to 500 kHz —  $\pm 1$  db, 500 kHz to 5 mHz —  $\pm 3.5$  db.

**OUTPUT LEVEL:** (open circuit) 3 volts rms all ranges.

**OUTPUT IMPEDANCE:** 200 ohms  $\pm 10\%$ .

**MAX. LOAD:** (on direct output) 700 ohms.

**OUTPUT STEP ATTENUATOR:** X1.0, X0.1, X.01, X.001, and X.0001; calibrated to work into open circuit.

Accuracy:  $\pm 3\%$  to 500 kHz,  $\pm 5\%$  to 5 mHz.

Output Impedance: 200 ohms  $\pm 1\%$ .

**SPECTRAL DENSITY:** Approximate spectral density (mv/ $\sqrt{\text{Hz}}$ ) for 1 volt rms output. 20 kHz band — 5, 500 kHz band — 1.2, 5 mHz band — 0.4.

**AMPLITUDE PROBABILITY DISTRIBUTION:** Symmetrical non-clipped Gaussian waveform all ranges.

**OUTPUT METER:** 0-5 volts rms.



### Model 610A 5 Hz to 5 mHz, 8 Ranges.....\$1,275

**FREQ. RANGES:** 10 Hz to 2 kHz, 10 Hz to 5 kHz, 10 Hz to 20 kHz, 10 Hz to 50 kHz, 10 Hz to 200 kHz, 10 Hz to 500 kHz, 10 Hz to 2 mHz, and 10 Hz to 5 mHz.

**OUTPUT SPECTRUM:** Uniform  $\pm 0.5$  db from 10 Hz to 500 kHz and  $\pm 2.0$  db from 500 kHz to 5 mHz.

**OUTPUT LEVEL:** 0 to 1 volt rms, adjustable by front panel amplitude control. A dynamic range of 5 to 1 peak to rms value is provided.

**OUTPUT STEP ATTENUATOR:** X1.0, X0.1, X.01, X.001, X.0001. Accuracy  $\pm 0.25$  db/step to 500 kHz;  $\pm 0.063$  db/step to 5 mHz.

## SOLID STATE NOISE GENERATORS

### Model 610A (cont.)

**SPECTRAL DENSITY:** Approx. for 1 volt rms output.

Band	mv/ $\sqrt{\text{Hz}}$	Band	mv/ $\sqrt{\text{Hz}}$
2 kHz	17.5	200 kHz	1.75
5 kHz	11.0	500 kHz	1.10
20 kHz	5.5	2 mHz	0.55
50 kHz	3.5	5 mHz	0.30

**AMPLITUDE PROBABILITY DISTRIBUTION:** Symmetrical Gaussian all ranges.

**OUTPUT METER:** 0 to 1 volt rms. Accuracy  $\pm 2\%$  of full scale to 2 mHz;  $\pm 5\%$  to 5 mHz.

**MAXIMUM LOAD:** 500 ohms on direct output.

**OUTPUT IMPEDANCE:** 50 ohms direct output.

**POWER REQUIREMENTS:** 115/230 volts  $\pm 10/20$  volts, 50 to 1,000 Hertz ac.



### Series 624A Fixed Frequency Noise Generators

**OUTPUT LEVEL:** (open circuit) 3 volts rms.

**OUTPUT IMPEDANCE:** 200 ohms  $\pm 10\%$ .

**MAX. LOAD:** (on direct output) 700 ohms.

**OUTPUT STEP ATTENUATOR:** X1.0, X0.1, X.01, X.001, and X.0001; calibrated to work into open circuit.

Output Impedance: 200 ohms  $\pm 1\%$ .

**AMPLITUDE PROBABILITY DISTRIBUTION:** Symmetrical non-clipped Gaussian waveform.

**OUTPUT METER:** 0-5 volts rms.

**POWER:** 115/230 volts  $\pm 10/20$  volts, 50 to 1,000 Hertz ac.

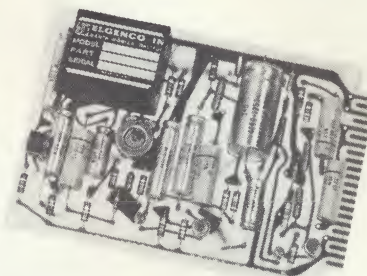
**DIMENSIONS:** 5 1/4" high x 8 3/8" wide x 11" deep.

Some of the many frequency ranges available are listed below. Write for further information.

#### MODEL 624A

-12124 20 Hz to 20 kHz $\pm 1$ db	\$305
-11124 10 Hz to 20 kHz $\pm 1$ db	\$340
-12154 20 Hz to 50 kHz $\pm 1$ db	\$325
-11154 10 Hz to 50 kHz $\pm 1$ db	\$360
-12115 20 Hz to 100 kHz $\pm 1$ db	\$345
-11115 10 Hz to 100 kHz $\pm 1$ db	\$380
-12125 20 Hz to 200 kHz $\pm 1$ db	\$395
-11125 10 Hz to 200 kHz $\pm 1$ db	\$430
-12155 20 Hz to 500 kHz $\pm 1$ db	\$415
-11155 10 Hz to 500 kHz $\pm 1$ db	\$450
-22154 20 Hz to 50 kHz $\pm 2$ db	\$305
-21154 10 Hz to 50 kHz $\pm 2$ db	\$340
-22115 20 Hz to 100 kHz $\pm 2$ db	\$310
-21115 10 Hz to 100 kHz $\pm 2$ db	\$345
-22125 20 Hz to 200 kHz $\pm 2$ db	\$330
-21125 10 Hz to 200 kHz $\pm 2$ db	\$365
-22155 20 Hz to 500 kHz $\pm 2$ db	\$345
-21155 10 Hz to 500 kHz $\pm 2$ db	\$380
-32155 20 Hz to 500 kHz $\pm 3$ db	\$305
-31155 10 Hz to 500 kHz $\pm 3$ db	\$340
-52124 20 Hz to 20 kHz $\pm 1/2$ db	\$430
-51124 10 Hz to 20 kHz $\pm 1/2$ db	\$465
-52154 20 Hz to 50 kHz $\pm 1/2$ db	\$450
-51154 10 Hz to 50 kHz $\pm 1/2$ db	\$485
-52115 20 Hz to 100 kHz $\pm 1/2$ db	\$470
-51115 10 Hz to 100 kHz $\pm 1/2$ db	\$505
-52125 20 Hz to 200 kHz $\pm 1/2$ db	\$520
-51125 10 Hz to 200 kHz $\pm 1/2$ db	\$555
-52155 20 Hz to 500 kHz $\pm 1/2$ db	\$540
-51155 10 Hz to 500 kHz $\pm 1/2$ db	\$575

## SOLID STATE NOISE GENERATORS



### FIXED FREQUENCY NOISE GENERATOR CARDS

**AMPLITUDE PROBABILITY DISTRIBUTION:** Symmetrical non-clipped Gaussian waveform.

**OUTPUT LEVEL:** (open circuit) 3 volts rms.

**AMPLITUDE CONTROL:** Continuously variable.

**SIZE:** 4 1/2" x 6 1/2" x 1".

**POWER:** —30 volts dc.

#### SERIES 3602A, 3603A, and 3606A

**OUTPUT IMPEDANCE:** 600 ohms  $\pm 10\%$ .

**MAX. LOAD:** 300 ohms.

Some of the many frequency ranges available are listed below. Write for further information.

#### MODEL 3602A

-12124 20 Hz to 20 kHz $\pm 1$ db	\$174
-11124 10 Hz to 20 kHz $\pm 1$ db	\$209
-12154 20 Hz to 50 kHz $\pm 1$ db	\$194
-11154 10 Hz to 50 kHz $\pm 1$ db	\$229

#### MODEL 3603A

-12115 20 Hz to 100 kHz $\pm 1$ db	\$214
-11115 10 Hz to 100 kHz $\pm 1$ db	\$249
-12125 20 Hz to 200 kHz $\pm 1$ db	\$229
-11125 10 Hz to 200 kHz $\pm 1$ db	\$264
-12155 20 Hz to 500 kHz $\pm 1$ db	\$249
-11155 10 Hz to 500 kHz $\pm 1$ db	\$284

#### MODEL 3602A

-22154 20 Hz to 50 kHz $\pm 2$ db	\$174
-21154 10 Hz to 50 kHz $\pm 2$ db	\$209
-22115 20 Hz to 100 kHz $\pm 2$ db	\$179
-21115 10 Hz to 100 kHz $\pm 2$ db	\$214
-22125 20 Hz to 200 kHz $\pm 2$ db	\$199
-21125 10 Hz to 200 kHz $\pm 2$ db	\$234
-22155 20 Hz to 500 kHz $\pm 2$ db	\$214
-21155 10 Hz to 500 kHz $\pm 2$ db	\$249
-32155 20 Hz to 500 kHz $\pm 3$ db	\$174
-31155 10 Hz to 500 kHz $\pm 3$ db	\$209

#### MODEL 3606A

-52124 20 Hz to 20 kHz $\pm 1/2$ db	\$299
-51124 10 Hz to 20 kHz $\pm 1/2$ db	\$334
-52154 20 Hz to 50 kHz $\pm 1/2$ db	\$319
-51154 10 Hz to 50 kHz $\pm 1/2$ db	\$354
-52115 20 Hz to 100 kHz $\pm 1/2$ db	\$339
-51115 10 Hz to 100 kHz $\pm 1/2$ db	\$374
-52125 20 Hz to 200 kHz $\pm 1/2$ db	\$354
-51125 10 Hz to 200 kHz $\pm 1/2$ db	\$389
-52155 20 Hz to 500 kHz $\pm 1/2$ db	\$374
-51155 10 Hz to 500 kHz $\pm 1/2$ db	\$409

#### SERIES 3607A

**OUTPUT IMPEDANCE:** 200 ohms  $\pm 10\%$ .

**MAX. LOAD:** 70 ohms.

Some of the many frequency ranges available are listed below. Write for further information.

#### MODEL 3607A

-15316 5 kHz to 1 mHz $\pm 1$ db	\$354
-35316 5 kHz to 1 mHz $\pm 3$ db	\$195
-25356 5 kHz to 5 mHz $\pm 2$ db	\$570
-35356 5 kHz to 5 mHz $\pm 3$ db	\$460



**ELGENCO, INC.**

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# ELGENCO NOISE GENERATORS

## SOLID STATE NOISE GENERATORS



**MODEL 632A Dual Output DC to 400 Hz and 10 Hz to 35 kHz**

### LOW FREQUENCY OUTPUT.....\$2,595

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 1.0\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.1$  db from DC to 350 Hz.  
**MAXIMUM OUTPUT:** 1.0 volts rms. A dynamic range of 5 to 1 peak to rms value is provided.  
**MAXIMUM SPECTRAL DENSITY:** Approx.  $1.5 \times 10^{-3}$  volts<sup>2</sup>/Hz.  
**OUTPUT MEAN:** Less than 1 mv.  
**OUTPUT IMPEDANCE:** Approximately 1,000 ohms.

### HIGH FREQUENCY OUTPUT

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 2\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.5$  db from 10 to 35,000 Hz.  
**MAXIMUM OUTPUT:** 1.0 volts rms. A dynamic range of 5 to 1 peak to rms values is provided.  
**MAXIMUM SPECTRAL DENSITY:** Approx.  $2 \times 10^{-3}$  volts<sup>2</sup>/Hz.  
**OUTPUT MEAN:** Less than 1 mv.  
**OUTPUT IMPEDANCE:** Approximately 100 ohms.

**NOISE REGULATOR:** rms output level continuously stabilized against a reference voltage.

**OVERLOAD INDICATOR:** Panel overload indicator lights when input noise level to regulator is out of regulation range.

**POWER:** 115/230 volts  $\pm 10/20$  volts, 50 to 1,000 Hertz ac.

**DIMENSIONS:** 5 3/4" high x 17" wide x 11" deep. 19" wide with rack mounting flanges mounted (supplied).



## ENCAPSULATED NOISE SOURCE MODULES

Series 1602A, 1603A, and 1606A.....\$95 to \$340  
 Various frequency ranges and output flatness available. Size: 1 3/4" x 1 1/2" x 3/4". Write for details.

### MODEL 3609A Power Supply Card \$67

(supplies power for up to 2 noise generator cards)

SIZE: 4 1/2" x 6 1/4".

INPUT: 115/230 volts  $\pm 10/20$  volts, 50 to 1000 Hz.

## OPTIONS & ACCESSORIES FOR MODELS 602A, 603A, 610A, & SERIES 624A

Rechargeable battery option..... add \$135  
 Full rack width cabinet and rack mounting hardware option add \$35  
 Adapter kit, dual unit and rack mounting hardware..... \$7  
 Adapter kit, single unit rack mounting (includes blank panel to make dual unit)..... \$56  
 Rechargeable battery kit..... \$145

## VACUUM TUBE NOISE GENERATORS



**Model 301A DC to 40 Hz.....\$2,195**

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 1\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.1$  db from 0 to 35 Hz.  
**MAX. OUTPUT:** 12 volts rms into a 1 megohm input resistance. Dynamic range of 5 to 1 peak-to-rms is provided.  
**MAX. SPECTRAL DENSITY:** Approx. 2.5 volts<sup>2</sup>/Hz.  
**D.C. UNBALANCE:** Less than 50 mv.  
**NOISE REGULATOR:** rms output level continuously stabilized against a reference voltage.

**OVERLOAD INDICATOR:** Panel overload indicator lights when input noise level to regulator is out of regulation range.

**POWER:** 115 v  $\pm 10$  v, 60 Hz ac.

**MOUNTING:** Standard relay rack panel 7" high x 19" wide. Can be supplied in deluxe cabinet as shown for \$75 extra.

**Model 321A DC to 120 Hz.....\$2,295**

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 1\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.1$  db from 0 to 105 Hz.  
**MAX. OUTPUT:** 12 volts rms into a 1 megohm input resistance. Dynamic range of 5 to 1 peak-to-rms is provided.  
**MAX. SPECTRAL DENSITY:** Approx. 1.0 volts<sup>2</sup>/Hz.  
**D.C. UNBALANCE:** Less than 50 mv.

**NOISE REGULATOR:** rms output level continuously stabilized against a reference voltage.

**OVERLOAD INDICATOR:** Panel overload indicator lights when input noise level to regulator is out of regulation range.

**POWER:** 115 v  $\pm 10$  v, 60 Hertz ac.

**MOUNTING:** Standard relay rack panel 7" high x 19" wide. Can be supplied in deluxe cabinet as shown for \$75 extra.

**Model 331A 10 Hz to 20 kHz.....\$1,395**

**OUTPUT SPECTRUM:** Uniform to plus or minus 0.5 db from 10 to 20,000 Hz.

**OUTPUT LEVEL:** 0 to 5 volts rms, adjustable by self contained attenuator. A dynamic range of 7 to 1 peak to rms value is provided.

**SPECTRAL DENSITY:** Approx. 1 mv<sup>2</sup>/Hz for 5 volt rms output.

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 1\%$ .

**NOISE REGULATOR:** rms output level continuously stabilized against a zener reference voltage.

**OVERLOAD INDICATOR:** Panel overload indicator lights when input noise level to regulator is out of regulation range.

**OUTPUT METER:** 0 to 5 volts rms.

**MAX. LOAD:** 10,000 ohms.

**POWER REQUIREMENTS:** 115/230 volts  $\pm 10/20$  volts, 50 to 1,000 Hertz ac.

**MOUNTING:** Standard relay rack panel 7" high x 19" wide and is 15" deep. Can be supplied in deluxe cabinet as shown for \$75 extra.

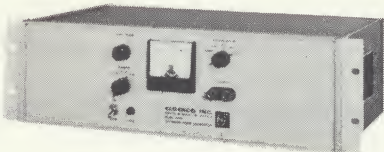
**MODEL 331A-23** 10 Hz to 2 kHz..... \$1495

**MODEL 331A-53** 10 Hz to 5 kHz..... \$1495

**MODEL 331A-54** 10 Hz to 50 kHz..... \$1495

**MODEL 331A-25** 10 Hz to 200 kHz..... \$1595

**MODEL 331A-55** 10 Hz to 500 kHz..... \$1745



**Model 602A with full rack width mounting option.**

## VACUUM TUBE NOISE GENERATORS



**Model 311A Dual output DC to 40 Hz and 10 Hz to 20 kHz.....\$2,595**

### LOW FREQUENCY OUTPUT

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 1\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.1$  db from 0 to 35 Hz.  
**MAX. OUTPUT:** 12 volts rms into a 1 megohm input resistance. Dynamic range of 5 to 1 peak-to-rms is provided.  
**MAX. SPECTRAL DENSITY:** Approx. 2.5 volts<sup>2</sup>/Hz.  
**D.C. UNBALANCE:** Less than 50 mv.

### HIGH FREQUENCY OUTPUT

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 2\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.5$  db from 10 to 20,000 Hz.  
**MAX. OUTPUT:** 15 volts rms.  
**MAX. SPECTRAL DENSITY:**  $7.5 \times 10^{-3}$  volts<sup>2</sup>/Hz.

**NOISE REGULATOR:** rms output level continuously stabilized against a reference voltage.

**OVERLOAD INDICATOR:** Panel overload indicator lights when input noise level to regulator is out of regulation range.

**POWER:** 115 v  $\pm 10$  v, 60 Hertz ac.

**MOUNTING:** Standard relay rack panel 7" high x 19" wide. Can be supplied in deluxe cabinet as shown for \$75 extra.

**Model 312A Dual output DC to 120 Hz and 10 Hz to 20 kHz.....\$2,695**

### LOW FREQUENCY OUTPUT

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 1\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.1$  db from 0 to 105 Hz.  
**MAX. OUTPUT:** 12 volts rms into a 1 megohm input resistance. Dynamic range of 5 to 1 peak-to-rms is provided.  
**MAX. SPECTRAL DENSITY:** Approx. 1.0 volts<sup>2</sup>/Hz.  
**D.C. UNBALANCE:** Less than 50 mv.

### HIGH FREQUENCY OUTPUT

**AMPLITUDE PROBABILITY DISTRIBUTION:** Gaussian  $\pm 2\%$ .  
**OUTPUT SPECTRUM:** Uniform  $\pm 0.5$  db from 10 to 20,000 Hz.  
**MAX. OUTPUT:** 15 volts rms.  
**MAX. SPECTRAL DENSITY:**  $7.5 \times 10^{-3}$  volts<sup>2</sup>/Hz.

**NOISE REGULATOR:** rms output level continuously stabilized against a reference voltage.

**OVERLOAD INDICATOR:** Panel overload indicator lights when input noise level to regulator is out of regulation range.

**POWER:** 115 v  $\pm 10$  v, 60 Hz ac.

**MOUNTING:** Standard relay rack panel 7" high x 19" wide. Can be supplied in deluxe cabinet as shown for \$75 extra.



**Models 602A and 610A combined by dual unit adapter kit.**



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# ELGENCO SALES REPRESENTATIVES

## EAST

### RON DAVIES ASSOCIATES

WASHINGTON, D.C. AREA - 301-652-6330, 7801 Norfolk Ave., Bethesda, Maryland 20014

### KASTLE ASSOCIATES

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SOUTHERN NEW JERSEY AREA - (609) 877-5971, 50 Messenger Lane, Willingboro, N.J. 08046

### HARVEY J. KRASNER ASSOC. INC.

NEW YORK CITY AREA - (516) 487-0690, 33 Great Neck Rd., Great Neck, N.Y. 11021

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HOUSTON - (713) 923-7616

SAN ANTONIO - (512) 341-1511

NEW ORLEANS - Dial Operator WX3161

## CENTRAL

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### V. T. RUPP CO.

LOS ANGELES - (213) 387-8224, 307 Parkman Ave., 90026

PHOENIX - (602) 939-8895

SAN DIEGO - (714) 298-9835

SAN FRANCISCO AREA - (415) 948-1483, 1182 Los Altos Ave., Los Altos, Calif. 94022

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### ALLAN CRAWFORD ASSOC., LTD.

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OTTAWA - (613) 725-1288, 376 Churchill Ave.

TORONTO AREA - (416) 636-4910, 65 Martin Ross Ave., Downsview, Ontario